This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) An isolated population of insulin-producing cells obtained from non-insulin-producing cells ~~made~~ by a process comprising contacting~~, for at least twenty-four hours,~~ the non-insulin producing cells for at least twenty-four hours with an amount of a substance effective to induce insulin production, wherein ~~a growth factor~~ the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of the preceding GLP-1 peptides, ~~growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof,~~ wherein the GLP-1 peptide or fragment thereof has ~~amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues~~ ~~H^7, G^{10}, F^{12}, T^{13}, and D^{15} of GLP-1~~ ~~and have~~ the ability to differentiate non-insulin producing cells into insulin-producing cells.

2. (currently amended) The population of claim 1, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vitro*.

3. (currently amended) The population of claim 1, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vivo*.

4. (canceled)

5. (original) The population of claim 1, wherein the non-insulin producing cells comprise pancreatic cells.

6. (original) The population of claim 1, wherein the non-insulin producing cells comprise pancreatic acinar cells.

7. (original) The population of claim 1, wherein the non-insulin producing cells comprise stem cells.

8. (original) The population of claim 1, wherein the non-insulin producing cells comprise pancreatic stem cells.

9. (currently amended) The population of claim 1, wherein the non-insulin producing cells ~~are~~ comprise mammalian cells.

10. (currently amended) The population of claim 9, wherein the mammalian cells ~~are~~ comprise human cells.

11. (canceled)

12. (currently amended) An isolated population of insulin-producing cells obtained from non-insulin-producing cells ~~made~~ by a process comprising contacting~~, for at least twenty-four hours,~~ the non-insulin-producing cells for at least twenty-four hours with an amount of a substance effective to induce insulin production, wherein ~~a growth factor~~ the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of the preceding Exendin-4 peptides, ~~growth factors having amino acid sequences substantially homologous to Exendin-4, or fragments thereof~~, wherein the Exendin-4 peptide or fragment thereof has ~~amino acid sequences substantially homologous to~~

~~Exendin-4 and fragments thereof comprise residues H^1, G^4, F^6, T^7, and D^9 of Exendin-4 and~~ ~~have~~ the ability to differentiate non-insulin producing cells into insulin producing cells.

13. (currently amended) The population of claim 12, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vitro*.

14. (currently amended) The population of claim 12, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vivo*.

15. (canceled)

16. (original) The population of claim 12, wherein the non-insulin producing cells comprise pancreatic cells.

17. (original) The population of claim 12, wherein the non-insulin producing cells comprise pancreatic acinar cells.

18. (original) The population of claim 12, wherein the non-insulin producing cells comprise stem cells.

19. (original) The population of claim 12, wherein the non-insulin producing cells comprise pancreatic stem cells.

20. (currently amended) The population of claim 12, wherein the non-insulin producing cells ~~are~~ comprise mammalian cells.

21. (currently amended) The population of claim 20, wherein the mammalian cells ~~are~~ comprise human cells.

22. (canceled)

23. (currently amended) A method of differentiating non-insulin producing cells into insulin producing cells, comprising contacting~~, for at least twenty-four hours,~~ the non-insulin producing cells for at least twenty-four hours with ~~a growth factor~~ an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of the preceding GLP-1 peptides, ~~growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof~~, wherein the GLP-1 peptide or fragment thereof has ~~amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H^{7}, G^{10}, F^{12}, T^{13}, and D^{15} of GLP-1 and have~~ the ability to differentiate non-insulin producing cells into insulin-producing cells.

24. (canceled)

25. (currently amended) The method of claim 23, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vitro*.

26. (currently amended) The method of claim 23, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vivo*.

27. (currently amended) A method of differentiating non-insulin producing cells into insulin producing cells, comprising contacting ~~for at least twenty-four hours,~~ the non-insulin producing cells for at least twenty-four hours with ~~a growth factor~~ an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid

substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of the preceding Exendin-4 peptides, ~~growth factors having amino acid sequences substantially homologous to Exendin-4, or fragments thereof~~, wherein the Exendin-4 peptide or fragment thereof has ~~amino acid sequences substantially homologous to Exendin-4 and fragments thereof comprise residues H^1, G^4, F^6, T^7, and D^9 of GLP-1 and have~~ the ability to differentiate non-insulin producing cells into insulin-producing cells.

28. (canceled)

29. (currently amended) The method of claim 27, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vitro*.

30. (currently amended) The method of claim 27, wherein the non-insulin producing cells are contacted with the ~~growth factor~~ substance *in vivo*.

31. (currently amended) A method of enriching a population of cells for insulin-producing cells, comprising contacting[[,]] non-insulin-producing cells for at least twenty-four hours[[,]] with an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and fragments of any of the preceding peptides, wherein the peptides or fragments thereof ~~the population of cells with GLP-1, or exendin-4, growth factors having amino acid sequences substantially homologous to GLP-1 or exendin-4, or fragments thereof, that differentiate non-insulin-~~

~~producing cells into insulin-producing cells, wherein the amino acid sequences substantially homologous to GLP-1 or Exendin-4 and fragments thereof exclude hepatocyte growth factor and comprise residues $H^{7(1)}$, $G^{10(4)}$, $F^{12(6)}$, $T^{13(7)}$, and $D^{15(9)}$ of GLP-1 and Exendin-4 and~~ have the ability to differentiate non-insulin-producing cells into insulin-producing cells.

32. (currently amended) A method of promoting pancreatic amylase producing cells to produce insulin, comprising contacting ~~for at least twenty-four hours,~~ the pancreatic amylase-producing cells for at least twenty-four hours with ~~a growth factor~~ an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of the preceding GLP-1 peptides, ~~growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof~~, wherein the GLP-1 peptide or fragment thereof has ~~amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H^{7}, G^{10}, F^{12}, T^{13}, and D^{15} of GLP-1 and have~~ the ability to differentiate non-insulin producing cells into insulin-producing cells.

33. (currently amended) A method of promoting pancreatic amylase producing cells to produce insulin, comprising contacting ~~,for at least twenty-four hours,~~ the pancreatic amylase-producing cells for at least twenty-four hours with ~~a growth factor~~ an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of the preceding Exendin-4 peptides, ~~growth factors having amino acid sequences~~

~~substantially homologous to Exendin-4, or fragments thereof~~, wherein the Exendin-4 peptide or fragment thereof has ~~amino acid sequences substantially homologous to Exendin-4 and fragments thereof comprise residues H^{1}, G^{4}, F^{6}, T^{7}, and D^{9} of GLP-1 and have~~ the ability to differentiate non-insulin producing cells into insulin-producing cells.

34. (currently amended) A method of inducing insulin secretion in a subject lacking insulin-producing cells, comprising administering to the subject ~~a growth factor~~ an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of the preceding GLP-1 peptides ~~growth factors having amino acid sequences substantially homologous to GLP-1, and fragment thereof~~, wherein the GLP-1 peptide or fragment thereof has ~~amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H^{7}, G^{10}, F^{12}, T^{13}, and D^{15} of GLP-1 and have~~ the ability to differentiate non-insulin producing cells into insulin-producing cells.

35. (canceled)

36. (currently amended) A method of inducing insulin secretion in a subject lacking insulin-producing cells, comprising administering to the subject ~~a growth factor~~ an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of the preceding Exendin-4 peptides ~~growth factors having amino~~

~~acid sequences substantially homologous to Exendin-4, and fragment thereof~~, wherein the Exendin-4 peptide or fragment thereof has ~~amino acid sequences substantially homologous to Exendin-4 and fragments thereof comprise residues H^1, G^4, F^6, T^7, and D^9 of Exendin-4 and~~ have the ability to differentiate non-insulin producing cells into insulin-producing cells.

37. (currently amended) The method of claim 36, wherein the ~~growth factor~~ substance is administered by multiple bolus ~~at least once~~ injections sufficient to maintain an effective amount of the substance.

38. (canceled)

39. (withdrawn) A method of treating diabetes in a subject, comprising

(a) obtaining non-insulin producing cells from the subject being treated;

(b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin-producing cells; and

(c) administering the insulin-producing cells from step (b) to the diabetic subject.

40. (withdrawn) The method of claim 39, wherein the non-insulin producing cells are pancreatic cells.

41. (withdrawn) The method of claim 39, wherein the non-insulin producing cells are stem cells.

42. (withdrawn) A method of treating diabetes in a subject, comprising

(a) obtaining non-insulin producing cells from the subject being treated;

(b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin producing cells;

(c) altering the surface antigens of the insulin producing cells of step (b), thereby reducing the likelihood that the insulin producing cells will cause an immune response; and

(d) administering the cells with altered surface antigens from step (c) to the diabetic subject.

43. (withdrawn) The method of claim 42, wherein the non-insulin producing cells are pancreatic cells.

44. (withdrawn) The method of claim 42, wherein the non-insulin producing cells are stem cells.

45. (withdrawn) A method of treating diabetes in a subject, comprising

(a) obtaining non-insulin producing cells from a donor;

(b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin producing cells; and

(c) administering the insulin producing cells from step (b) to the diabetic subject.

46. (withdrawn) The method of claim 45, wherein the donor is a cadaver.

47. (withdrawn) The method of claim 45, where the non-insulin producing cells are pancreatic cells.

48. (withdrawn) The method of claim 45, wherein the non-insulin producing cells are stem cells.

49. (withdrawn) A method of treating diabetes in a subject, comprising

(a) obtaining non-insulin producing cells from a donor;

(b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin producing cells;

(c) altering the surface antigens of the insulin producing cells, thereby reducing the likelihood of that the insulin producing cells will cause an immune response; and

(d) administering the cells with altered surface antigens from step (c) to the diabetic subject.

50. (withdrawn) The method of claim 49, wherein the donor is a cadaver.

51. (withdrawn) The method of claims 49, wherein the non-insulin producing cells are pancreatic cells.

52. (withdrawn) The method of claim 49, wherein the non-insulin producing cells are stem cells.